

EXHIBIT B

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

T-MOBILE US, INC. and T-MOBILE USA, INC.,
Petitioner,

v.

HUAWEI TECHNOLOGIES CO., LTD.,
Patent Owner.

Case IPR2017-00696
Patent 8,069,365 B2

Before TREVOR M. JEFFERSON, PATRICK M. BOUCHER, and
JOHN F. HORVATH, *Administrative Patent Judges*.

HORVATH, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

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I. INTRODUCTION

A. Background

T-Mobile US, Inc. and T-Mobile USA, Inc. (“Petitioner”) filed a Petition (Paper 4, “Pet.”) to institute *inter partes* review of claims 1, 3, and 27 of U.S. Patent No. 8,069,365 B2 (Ex. 1001, “the ’365 patent”). Huawei Technologies Co., Ltd. (“Patent Owner”) filed a Preliminary Response (Paper 9, “Prelim. Resp.”).

Upon consideration of the Petition and Preliminary Response, we are persuaded, under 35 U.S.C. § 314(a), that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of claims 1 and 3 of the ’365 patent, but are not persuaded that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of claim 27 of the ’365 patent. Accordingly, we institute an *inter partes* review of claims 1 and 3 of the ’365 patent.

B. Related Matters

Petitioner identifies the following as a matter that could affect, or be affected by, a decision in this proceeding: *Huawei Technologies Co. Ltd. v. T-Mobile US, Inc.*, Case No. 2:16-cv-00052-JRG-RSP (E.D. Tex). Pet. 1. Patent Owner identifies the same matter. Paper 8, 2.

C. Evidence Relied Upon

Reference		Date	Exhibit
Phan-Anh	US 7,769,374 B2	Mar. 12, 2001 (filed)	Ex. 1003
<i>Architecture Principles for Release 2000</i> , 3rd Generation Partnership Project, 3G TR 23.821 V1.0.1 (2000-07) (“TR23.821”)		July 24, 2000	Ex. 1004

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Reference		Date	Exhibit
<i>Reassignment for S-CSCF during the terminated call procedure</i> , Huawei, 3GPP TSG SA WG2 Architecture — S2#50, (“S2-060216”).		Jan. 10, 2006	Ex. 1005
Vergara	US 8,438,257 B2	July 10, 2007 (filed)	Ex. 1006
<i>IP Multimedia Subsystem (IMS); Stage 2 (Release 7)</i> , 3rd Generation Partnership Project, 3GPP TS 23.228 V7.2.0 (2005–12) (“TS23.228”).		Dec. 7, 2005	Ex. 1007

Petitioner also relies on the Declaration of Craig Bishop. Ex. 1002.

D. The Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability:

References	Basis	Claims Challenged
Phan-Anh and S2-060216	§ 103(a)	1 and 3
Phan-Anh, S2-060216, and TS23.228	§ 103(a)	1 and 3
Phan-Anh, S2-060216, TS23.228, and TR23.821	§ 103(a)	1 and 3
Vergara	§ 102(e)	27
Phan-Anh	§ 102(e)	27

II. ANALYSIS

A. The ’365 Patent

The ’365 patent relates to a method and device for disaster intolerance in an Internet Protocol multimedia system (IMS). Ex. 1001, 1:18–21.

IMS’s provide mobile users with multimedia services built upon Internet applications, services, and protocols. *See* Ex. 1002 ¶ 48. The core of an IMS network contains Session Initiation Protocol (SIP) servers, called

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“control functions,” and a user database. *Id.* This can be seen in Figure 5 of the '365 patent, which is reproduced below:

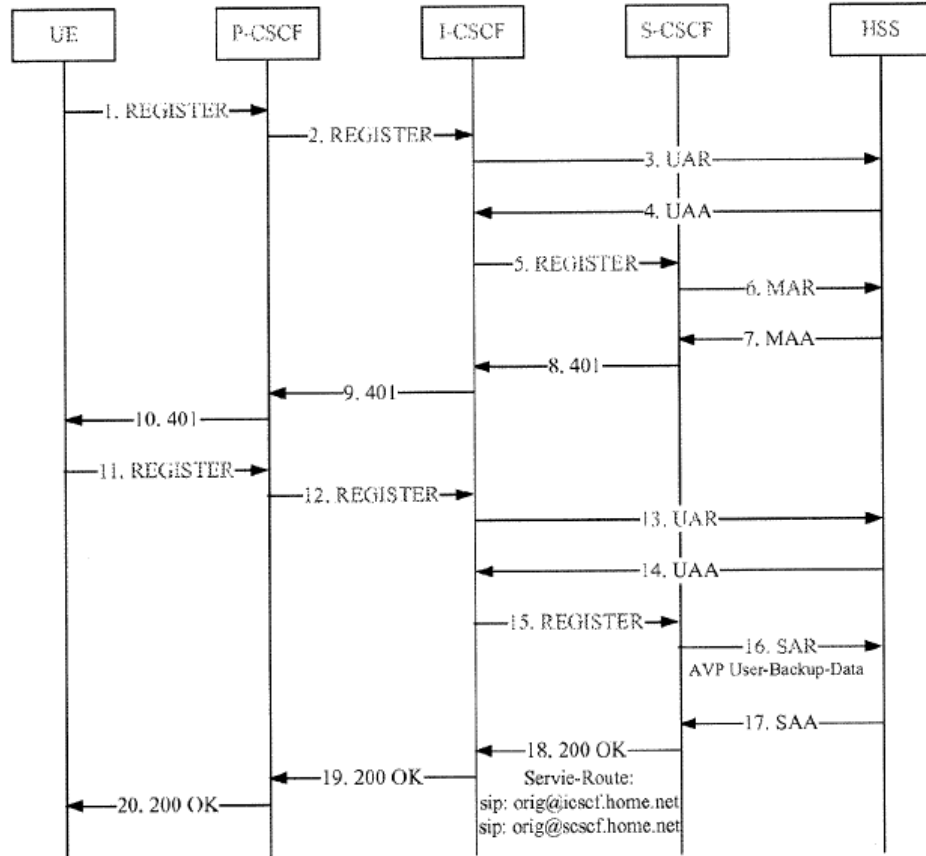


FIG. 5

Figure 5 is a flowchart depicting user registration in an IMS network in an embodiment of the '365 patent. Ex. 1001, 6:2–3. The IMS network consists of a home subscriber server (HSS) having a user database, a proxy call state control function (P-CSCF), an interrogating call state control function (I-CSCF), and a serving call state control function (S-CSCF). *Id.* at 1:25–60.

A user, using user equipment (UE) such as a mobile phone, registers with the IMS network. Ex. 1001 at 1:34–36. The UE connects to and sends a registration request (1. REGISTER) to the P-CSCF, and the P-CSCF forwards the request (2. REGISTER) to the I-CSCF. *Id.* at 1:37–43. The I-

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CSCF responds to the registration request by sending a user authorization request (3. UAR) to the HSS, and receives from the HSS a user authorization answer (4. UAA) containing information describing the capabilities needed by an S-CSCF to provide services to the UE. *Id.* at 1:44–56. The I-CSCF assigns the UE to an S-CSCF having the capacity to provide service to the UE, and forwards the user registration request (5. REGISTER) to the assigned S-CSCF. *Id.* at 1:56–60. The S-CSCF requests user authentication data from the HSS (6. MAR), receives the authentication data in an answer (7. MAA), and uses the data to send—via I-CSCF (8. 401) and P-CSCF (9. 401)—an authentication challenge to the UE (10. 401). *Id.* at 1:61–65.

The UE formulates a response to the authentication challenge, and transmits a new registration request containing the response to the IMS (12. REGISTER–15. REGISTER). *Id.* at 1:65–2:14. During this authentication cycle, the HSS records the address of the S-CSCF to which the UE has been assigned. *Id.* at 2:7–10. The S-CSCF verifies the UE’s authentication response, and upon verification, requests user subscription data from the HSS (16. SAR). *Id.* at 2:15–20. The S-CSCF’s request for user subscription data contains user data to be backed up on the HSS, including at least an SIP universal resource locator (URL) that identifies the P-CSCF through which the UE accesses the IMS, and a contact address of the UE. *Id.* at 7:25–40. The HSS saves this user backup data, and sends the S-CSCF the requested user subscription data (17. SAA). *Id.* at 2:15–20, 7:41–44. The S-CSCF then sends a register success message to the UE via the I-CSCF and P-CSCF (18–20. 200 OK). *Id.* at 2:21–22, 7:45–56. The register success message includes routing addresses for the I-CSCF (orig@iscsf.home.net) and the S-

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CSCF (orig@sscsf.home.net) to which the UE is assigned. *Id.* at 2:22–29, 7:45–56. This completes user registration with the IMS.

Once user registration is complete, the following information is stored in the following IMS network elements: (1) the routing addresses for the I-CSCF and the S-CSCF to which the UE is assigned are stored by the P-CSCF; (2) the user subscription data, address of the UE, and address of the P-CSCF through which the UE accesses the IMS are stored in the S-CSCF; and (3) the address of the UE, address of the S-CSCF to which the UE is assigned, and address of the P-CSCF through which the UE accesses the IMS are stored in the HSS. Ex. 1001, 2:32–43, 7:28–44.

IMS networks are designed to be fault tolerant, including with respect to S-CSCF faults. *See* Ex. 1001, 1:27–33. Conventionally, this is achieved by requiring a registered UE to re-register with the IMS on a periodic basis. *Id.* at 3:4–13. During the re-registration process, if the S-CSCF to which the UE was assigned has failed, the I-CSCF detects the failure because it does not receive a response to the re-registration request it forwarded to the failed S-CSCF. *Id.* at 3:13–20, Fig. 3 (steps 1–5). The I-CSCF notifies the UE of the failed re-registration attempt by sending—via the P-CSCF—a timeout message to the UE. *Id.* at 3:20–21, Fig. 3 (steps 6–7). The UE then registers with the IMS as a new or initial registrant, and the I-CSCF assigns the UE to a new, non-failed S-CSCF. *Id.* at 3:22–41, Fig. 3 (steps 8–15).

The '365 patent identifies a number of disadvantages associated with re-assigning an UE from a failed S-CSCF to a non-failed S-CSCF in the conventional manner described above. First, following S-CSCF failure, the UE lacks network service for the remainder of the pending re-registration period. Ex. 1001, 3:42–47. If that period is too long, the UE may have to

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wait a long time before attempting to re-register to the failed S-CSCF, and ultimately being re-assigned and registered to a non-failed S-CSCF. *Id.* at 3:49–50. If the re-registration period is too short, frequent UE re-registrations can tie up IMS network resources, and drain the UE’s battery. *Id.* at 3:53–61. Accordingly, the ’365 patent proposes “a method for realizing an IMS disaster tolerance so as to improve the network reliability without increasing the system burden.” *Id.* at 3:65–67.

In one embodiment, when a calling party’s UE attempts to initiate a call while assigned to a failed S-CSCF, the ’365 patent teaches re-assigning the calling party’s UE from the failed S-CSCF to a non-failed S-CSCF according to the method shown in Figure 6a, which is reproduced below.

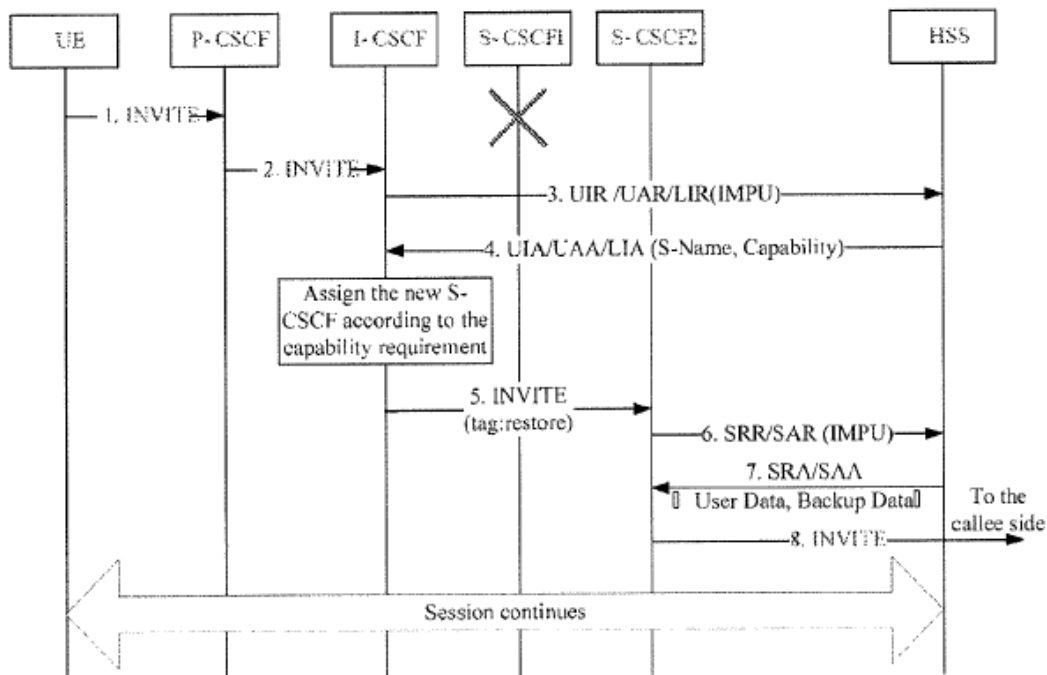


FIG. 6(a)

Figure 6a is a flowchart depicting a method of re-assigning a calling party’s UE from a failed S-CSCF1 to a non-failed S-CSCF2 when the calling party’s UE attempts to initiate a call. Ex. 1001, 6:4–7.

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To initiate the call, the calling party's UE sends a session setup request to the P-CSCF through which the calling party's UE accesses the IMS network (1. INVITE). Ex. 1001, 7:57–67. The session setup request includes the addresses of the I-CSCF and S-CSCF1 the calling party's UE was assigned to during registration. *Id.* The P-CSCF uses the address information to route the session setup request to I-CSCF (2. INVITE). *Id.* at 7:63–67, 8:35–37. I-CSCF attempts to forward the session setup request to S-CSCF1, and upon detecting a failure, re-assigns the calling party's UE to a new S-CSCF2 in the following manner. *Id.* at 7:63–67, 8:37–52. First, I-CSCF queries HSS (3. UIR/UAR/ LIR) to obtain the capabilities of failed S-CSCF1 (4. UIA/UAA/LIA). *Id.* at 8:53–60. I-CSCF then assigns, based upon the capabilities of failed S-CSCF1, the UE to a non-failed S-CSCF2 having similar capabilities, adds a “restore” tag to the calling party's session request message, and forward's the modified session request message to newly assigned S-CSCF2 (5. INVITE (tag:restore)). *Id.* at 9:66–67, 10:28–35. Newly assigned S-CSCF2 queries HSS for the calling party's stored backup and subscription data (6. SRR/SAR), and receives the backup data that was stored when the calling party's UE initially registered with failed S-CSCF1 (7. SRA/SAA). *Id.* at 10:41–49, 11:37–45. Newly assigned S-CSCF2 uses the backup and subscription data to restore service to the user by processing the call in the conventional manner, e.g., by sending the session request message to an I-CSCF in the called party's network domain (8. INVITE). *Id.* at 12:7–10, Fig. 6(a).

Petitioner challenges the patentability of claims 1, 3, and 27 of the '365 patent. Of the challenged claims, claims 1 and 27 are independent, and

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claim 3 depends from claim 1. Claim 1, which is representative, is reproduced below.

1. A method for realizing an Internet Protocol multimedia subsystem (IMS) disaster tolerance, comprising:

receiving, by a serving call session control function (S-CSCF), a user registration, and backing up necessary data which is required when a user service processing is restored on a storage entity in a network;

receiving, by an interrogating CSCF (I-CSCF) of the user's home domain, a service request of the user, and if it is found that the S-CSCF currently providing a service for the user fails, assigning a new S-CSCF to the user, and forwarding the service request to the newly assigned S-CSCF; and

interrogating and acquiring, by the newly assigned S-CSCF, subscription data of the user and the necessary data backed up by the original S-CSCF from the storage entity, and then restoring the user service processing according to the subscription data and the necessary data.

Ex. 1001, 20:26–43.

B. Claim Construction

The Board interprets claims of an unexpired patent using the broadest reasonable interpretation in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S.Ct. 2131, 2142–46 (2016). Consistent with the rule of broadest reasonable interpretation, claim terms are generally given their ordinary and customary meaning, as would be understood by one of ordinary skill in the

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art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

We depart from the plain and ordinary meaning of a claim term in only two instances, when the patentee acts as his own lexicographer, or when the patentee disavows the full scope of the term in the specification or during prosecution. *See Hill–Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014). “The standard for disavowal is exacting, requiring clear and unequivocal evidence that the claimed invention includes or does not include a particular feature.” *Poly–America, L.P. v. API Industries, Inc.*, 839 F.3d 1131, 1136 (Fed. Cir. 2016). Disavowal of claim scope can be implicit or explicit. For example, “an inventor may disavow claims lacking a particular feature when the specification describes ‘the present invention’ as having that feature.” *Id.*

Patent Owner proposes construction of the term “necessary data which is required when a user service processing request is restored,” which is recited in independent claim 1. Prelim. Resp. 19–20. Neither party proposes the construction of any other term. *See* Pet. 17–19; Prelim. Resp. 19–21. We explicitly construe the term “necessary data” below. No other terms of the ’365 patent require explicit construction.

1. necessary data

Patent Owner proposes the term “necessary data” be construed to mean “information necessary for the S-CSCF to handle traffic for a registered user, which includes at least a SIP URL¹ of a P-CSCF assigned

¹ Petitioner, relying on its expert, contends the proper term for the P-CSCF address is a SIP URI, but that these terms were used interchangeably during the development of IMS. Pet. 18, n. 2. Patent Owner does not dispute this.

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for a user device and a contact address for the user device.” Prelim. Resp. 19–20. Patent Owner argues this construction is consistent “with an explicit lexicographic definition provided in the specification of the ’365 patent.” *Id.* (citing Ex. 1001, 6:53–59, 7:28–40). Patent Owner further argues this construction should be adopted because the District Court adopted the same proposed construction in the underlying litigation. *Id.* at 21.

Petitioner argues the term “necessary data” should be construed to have its ordinary and customary meaning. Pet. 18. Petitioner argues “the patent specification does not contain any lexicography through which the inventors sought to define” the term “necessary data,” and that Patent Owner’s proposed construction improperly seeks to import limitations from the Specification into the claims. *Id.* at 19.

The Specification discloses that “[a] *core concept* of the present invention lies in that, when a user registers with an S-CSCF, necessary data used in a restoring process is backed up on a storage entity in a network; for example, an HSS.” Ex. 1001, 6:35–38 (emphasis added). The Specification further discloses that “to back up the necessary data . . . an AVP with an extended definition *needs to be added* in the SAR message . . . and the AVP *at least includes* the following information: A SIP URL of the P-CSCF through which the path of the user registration passes . . . ; and A contact address . . . to address the user terminal when the called service is restored.” *Id.* at 7:28-40 (emphasis added).

We, therefore, consider the terms URI and URL to be interchangeable when they appear in references discussing addressing CSCF’s in IMS networks.

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We find the Specification, by disclosing that a *core concept* of the invention requires storing necessary data that *at least includes* a contact address for the UE and an URL of the P-CSCF, constitutes unequivocal evidence that the inventor has implicitly disavowed broader claim scope, and requires the term “necessary data” to be construed to include the UE contact address and the SIP URL of the P-CSCF through which the UE accesses the network. *See Poly-America*, 839 F.3d at 1136. Consequently, we construe the term “necessary data” to mean “data necessary for the S-CSCF to handle traffic for a registered user, including at least a contact address for the user device and a SIP URL of a P-CSCF through which the user device connects to the network.”

C. Level of Ordinary Skill in the Art

Petitioner, relying on the testimony of Mr. Bishop, argues a person of ordinary skill in the art at the time the ’365 patent was filed would have had at least a bachelor’s degree in computer science or electrical engineering and 3–4 years of professional experience or equivalent academic experience in communications technology, and a familiarity with the 3GPP standards, including those related to IMS’s. Pet. 3–4 (citing Ex. 1002 ¶ 21). Patent Owner does not dispute Petitioner’s proposed definition, and does not proffer its own definition for a person of ordinary skill in the art. *See* Prelim. Resp. 1–58. Accordingly, for purposes of this Decision, we adopt Petitioner’s proposed definition.

D. Whether S2-060216, TS23.228, and TR23.821 are Printed Publications under 35 U.S.C. § 102

Petitioner relies on various 3GPP documents, including TR23.821, TS23.228, and S2-060216, to disclose what was known to persons of

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ordinary skill in the art at the time of the invention described in the '365 patent. Petitioner argues these documents are prior art because they were “available to the interested public well before October 23, 2006,” the earliest possible priority date to which the '365 patent is entitled to claim priority.

Pet. 33. Relying on the testimony of Mr. Bishop, Petitioner argues the relied upon documents were publically available because it was 3GPP practice:

to make standards proposals and draft standard specifications publically available on its FTP [file transfer protocol] website, without password restriction, before during, or shortly after a working group meeting for which the documents were intended, and to store them there for an indefinite period thereafter.

Id. at 34 (citing Ex. 1002 ¶¶ 38, 41–42). Further relying on the testimony of Mr. Bishop, Petitioner argues the date each of the 3GPP documents became publically available can be determined by viewing the date and time each document was uploaded to the 3GPP FTP website. *Id.* at 35 (citing Ex. 1002 ¶ 43). Accordingly, Petitioner argues TR23.821 was publically available no later than July 24, 2000, TS23.228 was publically available no later than December 7, 2005, and S2-060216 was publically available no later than January 10, 2006. *Id.* at 35–36 (citing Ex. 1002 ¶¶ 24–25, 32–35, Exs. 1021–1023).

Patent Owner argues Petitioner has failed to show the 3GPP documents are prior art to the '365 patent. Prelim. Resp. 21–32. Patent Owner argues Petitioner's evidence of public accessibility is insufficient because Petitioner has relied upon “time stamps indicating a ZIP file was uploaded to an FTP server—with no evidence that the particular ZIP file was actually disseminated to members of the public or indexed in a manner to

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provide sufficient public accessibility,” and because Petitioner has failed to show “the *specific S2-060216, TS23.228, and TR23.821 submissions* were publicly accessible” prior to the filing date of the ’365 patent. *Id.* at 22. Patent Owner further argues Petitioner’s evidence of the public availability of the 3GPP documents is insufficient because Petitioner has failed to provide (a) any evidence that the *specific* documents relied upon were uploaded to the 3GPP FTP server, (b) a printout of the contents of the *specific* files stored in the compressed ZIP files uploaded to the 3GPP FTP server, and (c) any evidence that the *specific* files relied upon were ever downloaded from the 3GPP FTP server. *Id.* at 24, 26–27. Patent Owner further argues that Mr. Bishop’s statement that he “would have” downloaded documents such as S2-060216 in preparation for 3GPP working group meetings, rather than that he “did” download the documents, is pure conjecture and fails to show the documents were ever downloaded. *Id.* at 25. Patent Owner further argues that Petitioner has failed to show “that multiple members of the public *actually* accessed [the relied upon documents] prior to the priority date of the ’365 Patent,” and has failed to show indexing so that “the public could exercise reasonable diligence to search/locate” the documents relied upon. *Id.* at 28. Patent Owner further argues that “[d]ocuments that are not cataloged or indexed in a meaningful way are not accessible to the public.” *Id.* at 29.

Upon consideration of Petitioner’s evidence and Patent Owner’s arguments regarding the insufficiency of Petitioner’s evidence, we are persuaded at this stage of the proceeding that Petitioner has demonstrated a reasonable likelihood of showing the 3GPP documents Petitioner relies upon, including the TR23.821, S2-060216, and TS23.228 documents, were

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publicly available before the earliest effective priority date of the '365 patent, and are therefore prior art under 35 U.S.C. § 102.

“Whether an asserted . . . document qualifies as a ‘printed publication’ under § 102 is a legal conclusion based on underlying factual determinations.” *Kyocera Wireless Corp. v. Int’l Trade Comm’n*, 545 F.3d 1340, 1350 (Fed. Cir. 2008). Public accessibility is “the touchstone in determining whether a reference constitutes a ‘printed publication.’” *In re Hall*, 781 F.2d 897, 898–99 (Fed. Cir. 1986). A reference is publicly accessible if it “has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it.” *In re Wyer*, 655 F.2d 221, 226 (CCPA 1981) (citations omitted). Public accessibility “is determined on a case-by-case basis, and based on the ‘facts and circumstances surrounding the reference’s disclosure to members of the public.’” *In re Lister*, 583 F.3d 1307, 1311 (Fed. Cir. 2009) (quoting *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004)). If public accessibility is proved, “there is no requirement to show that particular members of the public *actually received* the information” disclosed in the reference. *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1568–69 (Fed. Cir. 1988) (emphasis added).

“[A] variety of factors may be useful in determining whether a reference was publicly accessible.” *In re Lister*, 583 F.3d 1307, 1312 (Fed. Cir. 2009). One such factor is whether a party intended to make the reference public. *See In re Wyer*, 655 F.2d 221, 227 (CCPA 1981). Other factors include the length of time the reference was displayed, the expertise of the intended audience to which it was displayed, whether the displaying party had a reasonable expectation that the information disclosed in the

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reference would not have been copied, efforts made to prevent copying, and the ease or simplicity with which the reference could have been copied. *See In re Klopfenstein*, 380 F.3d 1345, 1350–51 (Fed. Cir. 2004). Professional and behavioral norms can inform whether a displaying party had a reasonable expectation that information disclosed in a reference would not have been copied. *Id.* Thus, “[e]vidence of routine business practice can be sufficient to prove that a reference was made [publically] accessible.” *Constant*, 848 F.2d at 1568–69. Cataloging and indexing are additional factors that can be useful in determining public accessibility. *In re Lister*, 583 F.3d at 1312. Neither factor, however, “is a necessary condition for [a] reference to be publicly accessible.” *Id.*

To determine whether the 3GPP documents Petitioner relies upon were publicly accessible, “we must consider all of the facts and circumstances surrounding [their] disclosure and determine whether an interested researcher would have been sufficiently capable of finding the reference[s] and examining [their] contents.” *Id.* We find, based on the *Klopfenstein* factors discussed above, Petitioner has demonstrated a reasonable likelihood of showing the 3GPP documents it relies upon were publically available prior to the priority date of the ’365 patent. The documents were posted on the 3GPP FTP website for an extended period of time (indefinitely), without encryption or password protection, and—based on 3GPP policies and practices regarding posted documents—with the expectation that those interested in the information disclosed in the documents would freely download and copy them. *See* Pet. 34; Ex. 1002 ¶¶ 2–11, 38–43. By their very nature, the 3GPP documents Petitioner relies upon are directed to a sophisticated audience—IT professionals in the

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telecommunications industry—who would have had the requisite computer skills needed to navigate the 3GPP FTP site to find and download documents of interest to them.

The only *Klopfenstein* factors that detract from Petitioner’s reasonable likelihood of showing the public availability of the 3GPP documents relied upon are the lack of any evidence that the relied upon documents were ever catalogued and indexed. However, contrary to Patent Owner’s contention, neither cataloging nor indexing “is a necessary condition for [the] reference[s] to be publicly accessible.” *In re Lister*, 583 F.3d at 1312. Nor does Petitioner need to show the documents relied upon were *actually* disseminated to members of the public as Patent Owner contends. *See Advanced Micro-Devices* 848 F.2d at 1568–69. Moreover, Petitioner is reasonably likely to show the documents relied upon were uploaded to the 3GPP FTP server at the dates and times Petitioner contends. In particular, relying on Mr. Bishop’s testimony, Petitioner contends: (1) the S2-060216 proposal (Ex. 1005) is contained in the S2-060216.zip file (Ex. 1022), and was uploaded to the 3GPP FTP website on January 10, 2006; (2) the TR23.821 specification (Ex. 1004) is contained in the 23.821-101.zip file (Ex. 1021), and was uploaded to the 3GPP FTP website on July 24, 2000; and (3) the TS23.228 specification (Ex. 1007) is contained in the 23.228-720.zip file (Ex. 1023), and was uploaded to the 3GPP FTP website on December 7, 2005. *See* Pet. 34–36; Ex. 1002 ¶¶ 25, 33, and 35.

E. Alleged Obviousness of Claims 1 and 3 over Phan-Anh and S2-060216

Petitioner argues claims 1 and 3 of the ’365 patent would have been obvious over Phan-Anh and S2-060216. Pet. 25–59. Upon review of

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Petitioner's evidence and Patent Owner's arguments regarding the insufficiency of that evidence, and for the reasons discussed below, we are persuaded that Petitioner has demonstrated a reasonable likelihood of showing claims 1 and 3 would have been obvious over Phan-Anh and S2-060216.

1. Overview of Phan-Anh (Ex. 1003)

Phan-Anh discloses a method of “protecting the Transport Address (TA) . . . of a mobile subscriber . . . from loss and after Call State Control Function (CSCF) crashes and after reset situations of a network element realizing CSCF functionality.” Ex. 1003, 1:7–13. Phan-Anh incorporates by reference, in its entirety, 3GPP technical report TR23.821 V.1.0.1, and provides a URL pointing to the location of the report on the 3GPP website. *Id.* at 1:15–19. Phan-Anh criticizes the network disclosed in TR23.821 for “fail[ing] to protect the IP address of a subscriber in the case of a reset situation of a network element realizing CSCF functionality . . . thereby preventing recovery after a reset of the network element.” *Id.* at 1:25–31. Accordingly, Phan-Anh proposes:

[A] technique for recovering location information of a subscriber in a mobile network including forwarding a registration request from the subscriber to an S-CSCF including the subscriber's TA and then forwarding an AL (Application Level) location update from the S-CSCF to a Home Subscriber Server (HSS) including the subscriber's TA and the (S-CSCF) address and storing data including the subscriber's TA and the S-CSCF address in the HSS so as to be protected against loss.

Id. at 1:38–46.

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Phan-Anh discloses its method for storing and recovering a subscriber's TA in Figures 4A and 4B. Ex. 1003, 2:22–26. Figure 4B of Phan-Anh is reproduced below.

FIG. 4B

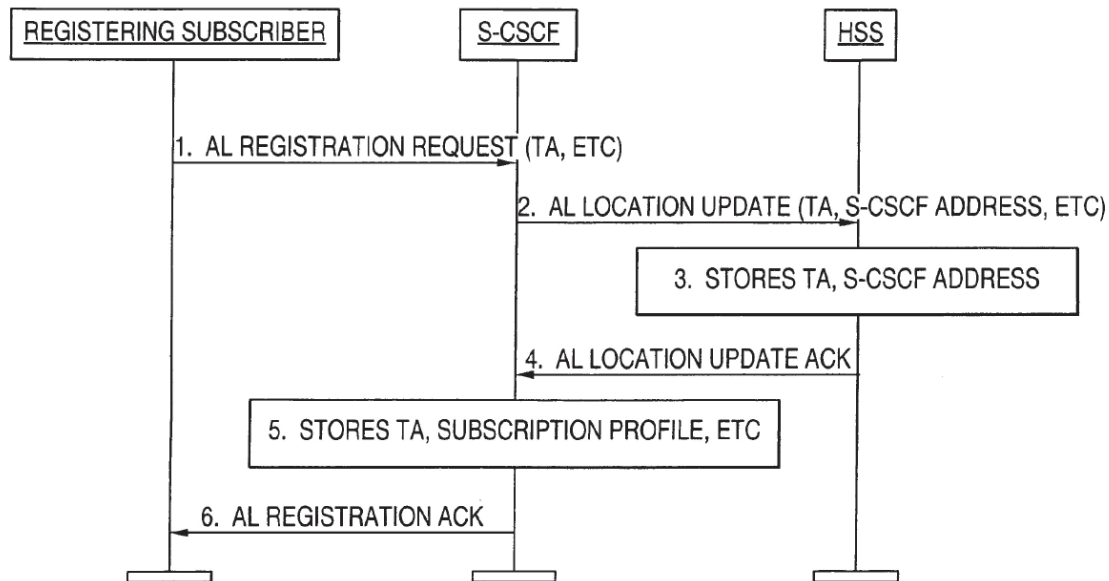


Figure 4B of Phan-Anh discloses a process for storing a subscriber's TA and S-CSCF address on an HSS when the subscriber initially registers with the S-CSCF. As shown in Figure 4B, a subscriber sends a registration request (step 1) that includes the subscriber's TA or transport address to the S-CSCF to which the subscriber has been assigned. *Id.* at 4:35–37. The S-CSCF sends a location update (step 2) to the HSS, which includes the subscriber's TA and the S-CSCF's address, and the HSS stores (step 3) that information on a hard disk or other non-volatile memory. *Id.* at 4:37–40. The HSS returns an acknowledgement message (step 4) to the S-CSCF, which contains the subscriber's profile, and the S-CSCF stores the subscriber's profile and TA (step 5). *Id.* at 4:40–43. Finally, the S-CSCF returns an acknowledge message (step 6) to the registering subscriber. *Id.* at 4:43–45.

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Phan-Anh's method of an S-CSCF recovering a subscriber's TA that has been lost due to the S-CSCF's failure is illustrated in Figure 4A, which is reproduced below.

FIG. 4A

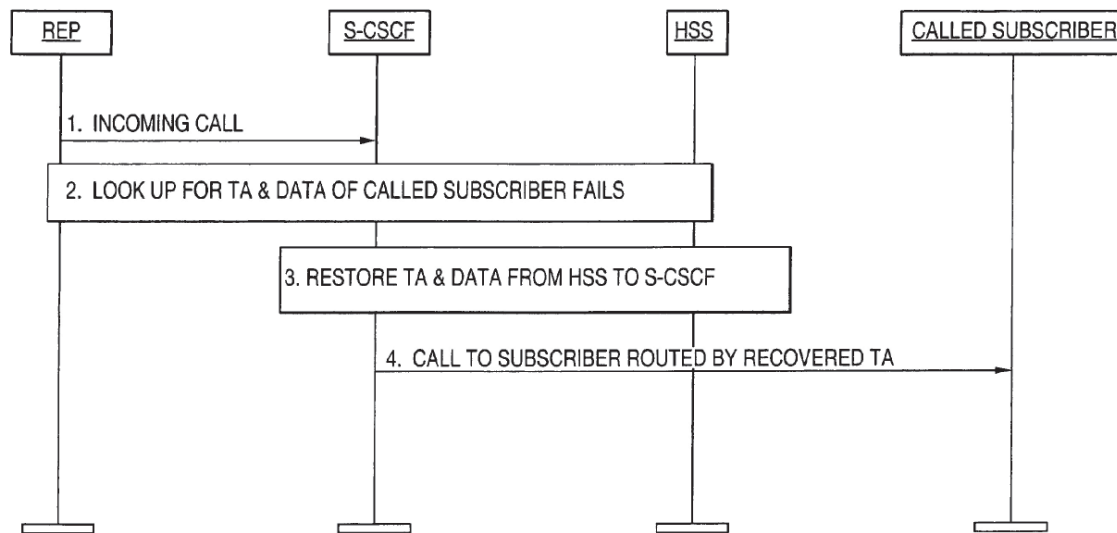


Figure 4A of Phan-Anh discloses a method that allows a failed and restarted S-CSCF to recover, from the HSS where it is stored, the TA and other data of a subscriber that had previously registered with the S-CSCF. Ex. 1004, 4:20–25. The restarted S-CSCF receives a session setup request for an incoming call (step 1) from a remote end-point (REP). *Id.* at 4:26–28. The S-CSCF looks for, but fails to find, the subscriber's TA and other data (step 2) because that data was lost when the S-CSCF failed. *Id.* at 4:28–29, 4:51–54. The restarted S-CSCF retrieves the subscriber's TA and other data (step 3) from the HSS where it was previously stored, and restores service to the subscriber by using the retrieved data to route the session setup request to the subscriber (step 4). *Id.* at 4:29–34.

2. Overview of TR23.821 (Ex. 1004)

As noted above, Phan-Anh incorporates TR23.821 by reference in its

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entirety. *See* Ex. 1003, 1:15–19. TR23.821 is a 3GPP technical report that discloses the “architectural requirements, features, functions, and solutions of [a] UMTS,” or Universal Mobile Telecommunications System. Ex. 1004, 7. The mechanism by which a user registers with the UMTS is disclosed in Figures B.1 and B.2 of TR23.821, and involves the user sending, via UE and P-CSCF, a registration request to an I-CSCF, having the I-CSCF query an HSS to determine the capabilities needed by an S-CSCF to service the UE, and assigning the UE to an S-CSCF having those capabilities. *Id.* at 48–52.

Information that is exchanged between the various network elements of the UMTS (e.g., the P-CSCF, I-CSCF, S-CSCF, and HSS) during the registration process is exchanged using SIP call control protocol. *See* Ex. 1004, 29 (“The single call control protocol applied . . . between CSCFs within one operator’s network . . . will be based on SIP.”); *see also id.* at 52 (indicating information flow H5 between I-CSCF and P-CSCF during UE registration is performed using “normal SIP response processing rules.”). The information that is exchanged among network elements during the registration process includes the subscriber’s profile. *Id.* at 51. The S-CSCF to which the subscriber’s UE is assigned pulls the subscriber’s profile (information flow H2) from the HSS using the Cx-Pull command. *Id.*

Once the subscriber’s registration is complete, the following information is stored in the following network elements of the UMTS: (1) the UE stores the P-CSCF address; (2) the P-CSCF stores the UE address; (3) the I-CSCF stores no information; (4) the S-CSCF stores the HSS address, the P-CSCF address, and the subscriber’s profile; and (5) the HSS stores the S-CSCF address. Ex. 1004, 56–57 (Table B.4). TR23.821 further indicates the 3GPP considered storing the P-CSCF address in the

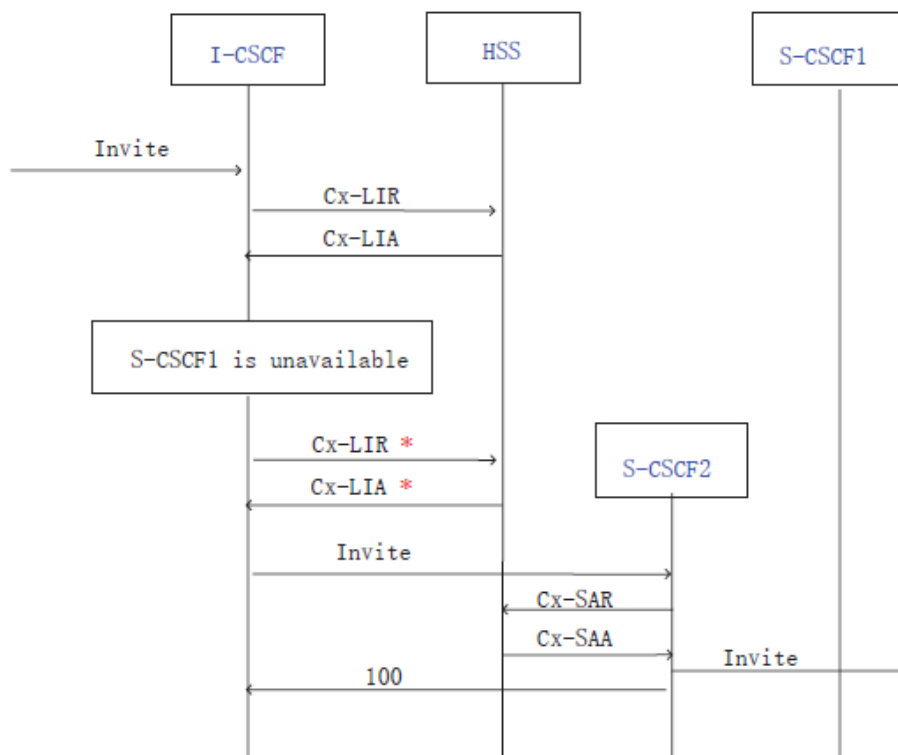
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HSS after registration. *Id.*

3. Overview of S2-060216 (Ex. 1005)

S2-060216 is a 3GPP architecture proposal submitted by Huawei for consideration during the January 16–20, 2006 meeting of the 3GPP SA2 Working Group. Ex. 1005, 1. The proposal addresses re-assignment of an S-CSCF during a terminated call procedure. *Id.* S2-060216 describes its S-CSCF re-assignment method in its only Figure, which is reproduced below.



As shown in the Figure reproduced above, when an I-CSCF in a called party's network receives an INVITE message from a calling party, it queries the called party's HSS (Cx-LIR) to retrieve the address of the S-CSCF1 (Cx-LIA) to which the called party's UE was assigned at registration. *Id.* at 2. When the I-CSCF determines the assigned S-CSCF1 has failed (e.g., because it cannot reach S-CSCF1), it queries the called party's HSS (Cx-

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LIR*) to retrieve the capabilities of the failed S-CSCF1 (Cx-LIA*). *Id.* The called party's I-CSCF uses the retrieved capabilities to select a new S-CSCF2, and forwards the INVITE message to the newly assigned S-CSCF2. *Id.* The newly assigned S-CSCF2 registers with the called party's HSS (Cx-SAR/Cx-SAA), and the HSS records the assignment of the called party's UE to new S-CSCF2. S-CSCF2 then forwards the INVITE message to the UE of the called party, thereby restoring service to the called party. *Id.* The I-CSCF in the called party's network subsequently routes all calls to the called party via newly assigned S-CSCF2. *Id.*

4. Comparison of Claims 1 and 3 to the Combined Teachings of Phan-Anh and S2-060216

Petitioner demonstrates a reasonable likelihood of showing how the combined teachings of Phan-Anh and S2-060216 account for each of the limitations required by claims 1 and 3. *See* Pet. 25–59.

For example, claim 1 recites a method for realizing disaster tolerance in an Internet Protocol network multimedia subsystem (IMS), and requires an S-CSCF receiving a user registration. Ex. 1001, 20:26–29. Petitioner demonstrates a reasonable likelihood of showing that Phan-Anh teaches a method allowing a subscriber to register with an S-CSCF by sending the S-CSCF a user registration, and having the S-CSCF store the subscriber's TA or transport address in order to restore subscriber service in the event the S-CSCF subsequently fails and loses this information. *See* Pet. 37–40; *see also* Ex. 1003, 1:38–47, 4:35–37, Fig. 4B.

Claim 1 further requires backing up necessary data on a storage entity, where the necessary data is required to restore user service. Ex. 1001, 20:29–31. Petitioner argues that Phan-Anh teaches storing a subscriber's

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TA, which is needed to restore the subscriber's service, on an HSS. *See* Pet. 40–44 (citing Ex. 1003, 4:20–22, 4:35–40, Fig. 4B). Relying on the testimony of Mr. Bishop, Petitioner argues a person of ordinary skill in the art would have found it obvious to modify Phan-Anh to also store on the HSS the SIP-based URL address of the P-CSCF through which the subscriber accesses the network. *Id.* at 43–44 (citing Ex. 1002 ¶¶ 106–109). In particular, Petitioner argues that Phan-Anh incorporates TR23.821 by reference, and TR23.821 teaches the S-CSCF must know the P-CSCF's address, which is an SIP-based URL address, to provide service to a user. *Id.* at 43 (citing Ex. 1002 ¶ 106; Ex. 1004, 27–29, 56–57). Therefore, Petitioner argues a person of ordinary skill in the art would have known that in order to restore service to a user, the S-CSCF would have needed to know the P-CSCF's address, and would therefore have found it obvious to have the S-CSCF store both the P-CSCF's address and the user's TA on the HSS. *Id.* at 43–44 (citing Ex. 1002 ¶¶ 107–109).

Patent Owner argues it would not have been obvious to combine the teachings of Phan-Anh and TR23.821 to store the P-CSCF address on the HSS as Petitioner contends. Prelim. Resp. 33–38. In particular, Patent Owner argues Petitioner has failed to show TR23.821 teaches addressing the P-CSCF using an SIP-based URL. *Id.* at 34–35. According to Patent Owner, although TR23.821 discloses the use of SIP protocols between certain components of an IMS, such as between UE and operator networks, TR23.821 “does not disclose using a[n] SIP protocol for P-CSCFs, let alone using a SIP URL to identify P-CSCFs.” *Id.* at 34. Patent Owner further argues that Mr. Bishop's opinion that it would have been obvious to store the P-CSCF's address on the HSS is pure conjecture with “no supporting

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factual basis.” *Id.* at 35 (citing Ex. 1002 ¶ 107). Although Patent Owner acknowledges that Mr. Bishop’s opinion is based, at least in part, on information Mr. Bishop quoted from a 3G IMS system textbook,² Patent Owner argues that Mr. Bishop’s opinion is entitled to no weight because Petitioner did not submit the textbook as an exhibit in this proceeding. *Id.* at 35–36 (citing Ex. 1002 ¶¶ 108–109). Patent Owner further argues that Petitioner’s rationale for combining Phan-Anh and TR23.821 amounts to little more than identifying a problem and the motivation to solve the problem, and that doing so is an insufficient reason to modify Phan-Anh. *Id.* at 36 (citing *Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1367 (Fed. Cir. 2017)). Lastly, Patent Owner argues it would not have been obvious, given the teachings of Phan-Anh and TR23.821, to store both the UE and P-CSCF addresses in the HSS because:

one would expect that, since Phan-Anh embraced the full disclosure of TR23.821, Phan-Anh would have discussed backing up both portions of information stored on the S-CSCF. . . . However, Phan-Anh does not do this, even though Phan-Anh acknowledges the same problem that Petitioners allude to regarding the potential loss of information stored on the S-CSCF. . . . Accordingly, Phan-Anh’s incorporation of TR23.821 by reference actually indicates that Patent Owner’s claimed solution—backing up necessary data that includes at least a SIP URL of a P-CSCF assigned for a user device and a contact address of the user device—is non-obviousness, and cuts against Petitioners’ arguments to the contrary.

Id. at 36–37.

² Gonzalo Camarillo and Miguel A. Garcia-Martin, *The 3G IP Multimedia Subsystem (IMS)* § 4.1.4 (2004). See Ex. 1002 ¶¶ 108–109.

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Upon consideration of Petitioner's evidence, and Patent Owner's arguments regarding the insufficiency of the same, we are persuaded that Petitioner has demonstrated a reasonable likelihood of being able to show, based on the combined teachings of Phan-Anh and TR23.821, that a person of ordinary skill in the art would have found it obvious to store the user's TA and the P-CSCF address on the HSS.

We are not persuaded by Patent Owner's argument that TR23.821 does not teach addressing the P-CSCF using an SIP-based URL. In section 9.1, entitled "Signalling", TR23.821 states that "[a] *single call control* protocol shall be used on the call control interfaces . . . *between CSCFs within one operator's network*," and this single control protocol "will be *based on SIP*." Ex. 1004, 29 (emphases added). TR23.821 further states that information flow H5, conducted between I-CSCF and P-CSCF during user registration, is conducted using "normal SIP response processing rules." *Id.* at 51–52.

We are equally unpersuaded by Patent Owner's argument that Mr. Bishop's opinion that it would have been obvious to store both the user's TA and the P-CSCF address as backup data on the HSS lacks a supporting factual basis and is entitled to no weight. As Patent Owner admits, Mr. Bishop's opinion is based, in part, on information Mr. Bishop found and quoted from a 3G IMS system textbook. *See* Prelim. Resp. 35–36; Ex. 1002 ¶¶ 108–109. Although Petitioner did not file the textbook as an exhibit, that fact alone does not necessitate giving no weight to Mr. Bishop's opinion. *Inter partes* review proceedings before the Board are governed by the Federal Rules of Evidence. *See* 27 C.F.R. § 42.62. Federal Rule of Evidence 703 states:

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An expert may base an opinion on facts or data in the case that the expert has been made aware of or personally observed. If experts in the particular field would reasonably rely on those kinds of facts or data in forming an opinion on the subject, they need not be admissible for the opinion to be admitted.

Accordingly, the fact that Petitioner did not file the textbook Mr. Bishop relied upon in forming his opinion is an insufficient reason to completely discount Mr. Bishop's opinion, as Patent Owner contends.

We are also not persuaded by Patent Owner's argument that Petitioner's rationale for combining Phan-Anh and TR23.821 amounts to little more than identifying a problem and the motivation to solve it. Petitioner argues a person of ordinary skill in the art would have combined the teachings of Phan-Anh and TR23.821 because Phan-Anh teaches storing data needed to restore user service in a failed S-CSCF (i.e., the user's TA), and TR23.821 teaches the S-CSCF also needs to know the user's subscriber information and P-CSCF address to provide service to the user. *See* Pet. 42–44 (citing Ex. 1002 ¶¶ 106–109). Petitioner explains that a person skilled in the art would have modified Phan-Anh, based on the teachings of TR23.821, to store all of the information needed by the S-CSCF on the HSS in order to be able to recover the user's service. Petitioner's argument is therefore distinctly different from the argument rejected in *Metalcraft*, where the challenger “provide[d] no explanation or reasoning for concluding that one of skill would have combined . . . references to produce the claimed invention.” *Metalcraft*, 848 F.3d at 1367.

Finally, we are not persuaded by Patent Owner's argument that it would not have been obvious to store both the user's TA and the P-CSCF

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address on the HSS because Phan-Anh did not do so while attempting to solve the same problem addressed by the '365 patent. An invention is obvious "if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious . . . to a person having ordinary skill in the art to which the claimed invention pertains." 35 U.S.C § 103(a) (emphasis added). The person of ordinary skill in the art "is a theoretical construct used in determining obviousness under § 103, and is not descriptive of some particular individual." *Endress + Hauser, Inc., v. Hawk Measurement Sys. Pty. Ltd.*, 122 F.3d 1040, 1042 (Fed. Cir. 1997). Thus, the fact that Phan-Anh considered the same problem addressed by the '365 patent, but came up with a different solution, does not necessitate a finding that the invention claimed in the '365 patent would not have been obvious to a person of ordinary skill in the art.

Significantly, Phan-Anh's solution neither criticizes, discredits, nor otherwise discourages the solution claimed in the '365 patent. On this record, it, therefore, does not teach away from that solution. *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) ("The prior art's mere disclosure of more than one alternative does not constitute a teaching away from . . . alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed. . . ."). Moreover, Petitioner reasonably argues that the reason Phan-Anh only proposed storing the user's TA is because 3GPP was still considering storing the P-CSCF address on the HSS when Phan-Anh was filed, and the user's TA was the only data needed to restore user service that 3GPP was not considering storing on the HSS. *See* Pet. 26–28 (citing Ex. 1002 ¶¶ 88–91).

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Claim 1 further requires an I-CSCF of the user's home domain receiving a service request of the user, assigning a new S-CSCF to the user if it is found that the S-CSCF currently providing service to the user fails, and forwarding the service request to the newly assigned S-CSCF. Ex. 1001, 20:32–37. Petitioner, relying on the testimony of Mr. Bishop, demonstrates a reasonable likelihood of showing that S2-060216 teaches an I-CSCF in the user's home domain receiving a service request of the user (INVITE), assigning a new S-CSCF (S-CSCF2) to the user after determining that the currently assigned S-CSCF has failed (S-CSCF1 is unavailable), and forwarding the service request (INVITE) to the newly assigned S-CSCF (S-CSCF2). *See* Pet. 46–50 (citing Ex. 1002 ¶¶ 112–117); Ex. 1005, 2.

Claim 1 further requires the newly assigned S-CSCF interrogating, and acquiring from the storage entity, the user's subscription data and the necessary data backed up by the original S-CSCF. Ex. 1001, 20:38–41. Petitioner argues the combination of Phan-Anh and S2-060216 disclose this limitation. *See* Pet. 51–55. In particular, Petitioner argues Phan-Anh teaches when an S-CSCF cannot find the data needed to provide service to a user, the S-CSCF retrieves the data (e.g., user TA and subscription data) from the HSS. *Id.* at 51–53; Ex. 1003 4:10–12, 4:28–31, 5:7–31, Fig. 4A. Petitioner further argues S2-060216 also teaches retrieving data needed to restore service to a user from the HSS (e.g., user subscription data). *Id.* at 53–54; Ex. 1005, 2. Relying on the testimony of Mr. Bishop, Petitioner argues the combined teachings of Phan-Anh and S2-060216 teach “interrogating and acquiring the necessary data from the HSS.” *Id.* at 54 (citing Ex. 1002 ¶ 121). In particular, Petitioner argues that a person of ordinary skill in the art would have known that Phan-Anh's data restoration

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procedure could have been performed “even if a different S-CSCF performed it,” and therefore could have been performed “to retrieve the necessary data stored in the HSS after failure of the original S-CSCF and assignment of a new S-CSCF.” *Id.* at 53 (citing Ex. 1002 ¶ 120). Petitioner further argues that a person of ordinary skill in the art would have combined the teachings of Phan-Anh and S2-060216 because Phan-Anh teaches restoring a user’s service when an S-CSCF fails and restarts, S2-060216 teaches restoring a user’s service when an S-CSCF fails and is replaced, and combining the two solutions into Phan-Anh would have “achieve[d] a solution that covered both S-CSCF failure/restart and S-CSCF failure/re-assignment.” *Id.* at 57–58 (citing Ex. 1002 ¶ 129).

Patent Owner argues Petitioner has failed to show it would have been obvious to combine the teachings of Phan-Anh and S2-060216 because Petitioner has failed to articulate reasoning with rational underpinning to combine the two references. Prelim. Resp. 41–51. In particular, Patent Owner argues Petitioner has “not set forth sufficient reasoning for modifying Phan-Anh in view of S2-060216” because Petitioner has provided inconsistent explanations for how Phan-Anh would have been modified by S2-060216. *Id.* at 42. Patent Owner further argues Petitioner has failed to explain how Phan-Anh would have been modified to have a newly assigned S-CSCF acquire the user subscription data and necessary data from the HSS because Phan-Anh “only describes loading data back onto the originally assigned S-CSCF.” *Id.* at 46. Patent Owner further argues Petitioner has failed to articulate a reason to modify Phan-Anh in view of S2-060216 because Petitioner has failed to consider that Phan-Anh already teaches a solution for handling calls when the S-CSCF fails to restart. *Id.* at 44–45. In

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particular, Patent Owner argues that because Phan-Anh teaches having the I-CSCF handle calls when the S-CSCF fails and does not restart, and re-assigning a user to a new S-CSCF after the call has terminated, Phan-Anh teaches away from re-assigning the user to a new S-CSCF while the call is being setup as taught by S2-060216. *Id.*

Upon consideration of Petitioner's evidence, and Patent Owner's arguments regarding the insufficiency of that evidence, we are persuaded that Petitioner has demonstrated a reasonable likelihood of showing the combination of Phan-Anh and S2-060216 teaches a newly assigned S-CSCF interrogating and acquiring the user's subscription data and necessary data from the HSS.

We are not persuaded, on this record, by Patent Owner's argument that Petitioner has provided inconsistent explanations for modifying Phan-Anh in view of the teachings of S2-060216. Petitioner argues a person of ordinary skill in the art would have combined the teachings of Phan-Anh (restoring service on a restarted S-CSCF) with the teachings of S2-060216 (restoring service on a re-assigned S-CSCF) in order to "achieve a solution that covered both S-CSCF failure/restart and S-CSCF failure/re-assignment." Pet., 57–58 (citing Ex. 1002 ¶ 129). On this record, Petitioner's reasoning is both rational, and consistent with Petitioner's argument that—in the event Phan-Anh's failed S-CSCF does not restart—a person of ordinary skill in the art would have known that Phan-Anh's data-restoration process could have been performed by a different S-CSCF, such as "after failure of the original S-CSCF and assignment of a new S-CSCF." *Id.* at 53 (citing Ex. 1002 ¶ 120).

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We are also not persuaded by Patent Owner's argument that Petitioner has failed to explain how Phan-Anh would be modified in view of S2-060216 because Phan-Anh only describes the originally assigned S-CSCF acquiring the user's subscription data and necessary data. Petitioner argues it is the *combination* of Phan-Anh and S2-060216 that teaches the newly assigned S-CSCF acquiring the user's subscription data and necessary data from the HSS, not Phan-Anh alone. *See* Pet. 44. "Non-obviousness cannot be established by attacking references individually where the [challenge] is based upon the teachings of a combination of references." *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). "Rather, the test [for obviousness] is what the combined teachings of the references would have suggested to those of ordinary skill in the art." *In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

Finally, we are not persuaded on this record by Patent Owner's argument that Petitioner has failed to articulate a rational reason to modify Phan-Anh because Phan-Anh already teaches a solution for handling calls when the S-CSCF fails to restart, and that solution teaches away from a newly assigned S-CSCF handling the call. First, it is not clear whether Phan-Anh actually teaches a solution for handling calls when the S-CSCF fails to restart. Patent Owner argues it does because it discloses a procedure to follow when the S-CSCF "information in the UMS is not valid," which Patent Owner contends occurs when a failed S-CSCF has not restarted. Prelim. Resp. 44 (quoting Ex. 1003, 5:48–61). However, Phan-Anh does not explain why the S-CSCF information stored in the UMS is no longer valid. It could be invalid, as Patent Owner contends, because it points to an S-CSCF that has failed and not restarted, and is therefore no longer

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reachable. However, it could also be invalid because it has simply been corrupted due to a failure at the UMS.

Regardless, even if Patent Owner is correct that Phan-Anh teaches an alternative procedure for restoring user service when an S-CSCF has failed and not restarted, at this stage of the proceeding we determine that Phan-Anh does not teach away from replacing the failed S-CSCF with a newly assigned S-CSCF in the manner Petitioner argues is taught by the combination of Phan-Anh and S2-060216. In particular, Phan-Anh does not criticize, discredit, or discourage restoring user service by replacing the S-CSCF during call setup. *In re Fulton*, 391 F.3d at 1201.

Lastly, claim 1 requires the newly assigned S-CSCF restoring user service processing according to the subscription data and the necessary data. Ex. 1001, 20:41–43. Petitioner demonstrates a reasonable likelihood of showing the combination of Phan-Anh and S2-060216 teaches the newly assigned S-CSCF restoring user service based on the subscription and necessary data. *See* Pet. 55. Relying on the testimony of Mr. Bishop, Petitioner argues the combination of Phan-Anh and S2-060216 teaches the limitation because Phan-Anh teaches using a failed and restarted S-CSCF to route calls to a user after recovering the user's TA and subscription data, and S2-060216 teaches using a newly assigned S-CSCF to route calls to the user. *Id.* (citing Ex. 1002 ¶¶ 123–125; Ex. 1003, 4:33–34, Fig. 4A; Ex. 1005, 2).

Upon consideration of the evidence both for and against, and for the reasons discussed above, we are persuaded that Petitioner has demonstrated a reasonable likelihood of showing it would have been obvious to a person of ordinary skill in the art to combine the teachings of Phan-Anh and S2-060216, and that the combined teachings adequately account for each of the

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limitations required by claim 1. Petitioner has similarly demonstrated a reasonable likelihood of showing the combined teachings of Phan-Anh and S2-060216 adequately accounts for each of the limitations required by claim 3. *See* Pet. 56–57. Consequently, Petitioner has demonstrated a reasonable likelihood of showing claims 1 and 3 would have been obvious over Phan-Anh and S2-060216.

F. Alleged Obviousness of Claims 1 and 3 over Phan-Anh, S2-060216, and TS23.228

Petitioner argues claims 1 and 3 of the '365 patent would have been obvious over Phan-Anh, S2-060216, and TS23.228. *See* Pet. 60–61. Upon review of Petitioner's evidence and Patent Owner's arguments regarding the insufficiency of that evidence, and for the reasons discussed below, we are not persuaded that Petitioner has demonstrated a reasonable likelihood of showing claims 1 and 3 would have been obvious over Phan-Anh, S2-060216, and TS23.228.

1. Overview of TS23.228

TS23.228 is a 3GPP technical specification that “defines the stage-2 service description for the IP Multimedia Core Network Subsystem (IMS), which includes the elements necessary to support IP Multimedia (IM) services.” Ex. 1007, 10. In section 4.3.4., entitled “Identification of network nodes,” the specification discloses “[t]he CSCF, BGCF and MGCF nodes shall be identifiable using a valid SIP URI . . . on those interfaces supporting the SIP protocol. . . . These SIP URIs would be used when identifying these nodes in header fields of SIP messages.” *Id.* at 28. The specification further discloses that user registration with the IMS “relates to a particular contact address and a particular Private User Identity.” *Id.* at 41.

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2. *Comparison of Claims 1 and 3 to the Combined Teachings of Phan-Anh, S2-060216, and TS23.228*

Petitioner does not compare the limitations of claims 1 and 3 to the teachings of Phan-Anh, S2-060216, and TS23.228. Instead, Petitioner argues that TS23.228 teaches CSCF nodes in IMS's are identifiable via SIP URIs in the header fields of SIP messages, and that a user registers with an IMS using a particular contact address. *See* Pet. 60. Relying on the opinion of Mr. Bishop, Petitioner argues a person of ordinary skill in the art “would have been motivated to look to TS 23.228 for information that could be stored in the HSS at registration for restoration purposes.” *Id.* at 60–61 (citing Ex. 1002 ¶ 134).

Patent Owner argues Petitioner has failed to meet its burden of demonstrating it is reasonably likely to show the unpatentability of claims 1 and 3 over the combination of Phan-Anh, S2-060216, and TS23.228 because Petitioner has failed to show that TS23.228 teaches backing up necessary data, including a user's contact address and a P-CSCF's SIP URL, and has failed to articulate reasoning with rational underpinning for modifying the teachings of Phan-Anh in view of the teachings of TS23.228. Prelim. Resp. 38–40.

A request for *inter partes* review must set forth, for each challenged claim, (a) the statutory grounds on which the claim is challenged, (b) the prior art relied upon in support of the challenge, and (c) a statement explaining how the claim is unpatentable under the statutory ground by “specify[ing] where each element of the claim is found in the prior art . . . relied upon.” 37 C.F.R. § 42.104. The request “*shall not be instituted* for a ground of unpatentability *unless . . . the petition supporting the ground*

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would demonstrate that there is a reasonable likelihood that at least one of the claims challenged in the petition is unpatentable.” *Id.* § 42.108(c) (emphases added).

Although Petitioner has identified the statutory ground and prior art relied upon in its challenge of claims 1 and 3 as obvious over Phan-Anh, S2-060216, and TS23.228, Petitioner has failed to provide sufficient analysis showing where each of the limitations recited in claims 1 and 3 can be found in the prior art. *See* Pet. 60–61. Indeed, Petitioner has even failed to incorporate by reference its analysis, discussed in § II.E.4, *supra*, that claims 1 and 3 would have been obvious in view of the teachings of Phan-Anh and S2-060216, alone. *Id.* Consequently, we find Petitioner has failed to demonstrate a reasonable likelihood of showing claims 1 and 3 would have been obvious over the combination of Phan-Anh, S2-060216, and TS23.228. *See* 37 C.F.R. § 42.108(c).

G. Alleged Anticipation of Claim 27 by Vergara

Petitioner argues claim 27 of the ’365 patent is anticipated by Vergara. *See* Pet. 61–82. Upon review of Petitioner’s evidence and Patent Owner’s arguments regarding the insufficiency of that evidence, and for the reasons discussed below, we are not persuaded that Petitioner has demonstrated a reasonable likelihood of showing claim 27 is anticipated by Vergara.

1. The Priority Date of Claim 27 of the ’365 Patent

Petitioner argues Vergara (filed July 10, 2007) is prior art to claim 27 of the ’365 patent under 35 U.S.C. § 102(e) because claim 27 is not entitled to claim priority to Chinese Application CN 2006-1-0150721 (filed October 24, 2006) (“CN2006”), and Vergara was filed before Chinese Application

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CN 2007-1-0135727 (filed August 10, 2007) (“CN2007”), which is the first application to which claim 27 is entitled to claim priority. *See* Pet. 61–63.

Claim 27 of the ’365 patent is reproduced below.

27. A method for realizing an Internet Protocol multimedia subsystem (IMS) disaster tolerance, comprising:

receiving, by a serving call session control function (S-CSCF), a user registration, saving service data of a user, and backing up necessary data which is required when a user service processing is restored on a storage entity in a network; and

accepting, by the S-CSCF, a service request of the user after the service data of the user is lost, interrogating and acquiring subscription data of the user and the backup necessary data from the storage entity, and then processing the service request of the user according to the subscription data and the backup necessary data.

Ex. 1001, 27:1–13.

Petitioner argues claim 27 is directed to a data restoration process in which an originally assigned S-CSCF has failed, lost user data, restarted, and recovered the user data without the need to assign a new S-CSCF. Pet. 61. Petitioner argues the ’365 patent discloses this restoration process in Figures 6c, 6d, 7b, and 7c, and in the description of those Figures. *Id.* at 62 (citing Ex. 1001, 12:39–42, 14:3–19, Figs. 6c–6d, 7b–7c). Petitioner argues claim 27 is not entitled to claim priority to CN2006 because that application lacks figures corresponding to Figures 6c, 6d, 7b, and 7c of the ’365 patent, and the corresponding description of those Figures. *Id.*

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Patent Owner agrees that claim 27 is directed to a data restoration process in which an originally assigned S-CSCF has failed, lost user data, restarted, and recovered the user data without the need to assign a new S-CSCF. Prelim. Resp. 51. However, Patent Owner argues Vergara is not prior art to claim 27 because claim 27 is fully supported by CN2006, and entitled to claim priority to that application. *Id.* In particular, Patent Owner argues paragraphs 141–144 of CN2006 provide explicit support for claim 27 of the '365 patent. *Id.* at 53–54.

We are persuaded by Patent Owner's argument. In paragraphs 141–144, CN2006 discloses that when an I-CSCF receives a session setup request for an S-CSCF that has failed and restored to normal status (i.e., restarted), it forwards the session setup request to the failed/restarted S-CSCF with an added disaster tolerance restoring indicator. Ex. 1032 ¶ 143. When the failed/restarted S-CSCF receives the session setup request with the disaster tolerance restoring indicator, it “performs the relevant processing according to the flow of the present invention.” *Id.* ¶ 144. Elsewhere, CN2006 discloses an S-CSCF processes a received session setup request containing a disaster tolerance restoring indicator by “interrogat[ing] and acquir[ing] the backup data and the subscription data of the user from the HSS so as to provide the service for the user.” *Id.* ¶ 70; *see also id.* ¶¶ 96–97, 112–113. CN2006 also discloses an S-CSCF stores a user's backup data and subscription data on the HSS when it receives an initial registration request from the user. *Id.* ¶¶ 53–55; Fig. 4.

Accordingly, for the reasons discussed above, we are persuaded on this record that claim 27 of the '365 patent is entitled to claim priority to the October 24, 2006 filing date of CN2006, and that Vergara is not prior art to

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claim 27. Consequently, we are not persuaded that Petitioner has demonstrated a reasonable likelihood of showing claim 27 is anticipated by Vergara.

H. Alleged Anticipation of Claim 27 by Phan-Anh

Petitioner alleges claim 27 of the '365 patent is anticipated by Phan-Anh. *See* Pet. 82–85. Upon review of Petitioner's evidence and Patent Owner's arguments regarding the insufficiency of that evidence, and for the reasons discussed below, we are not persuaded that Petitioner has demonstrated a reasonable likelihood of showing claim 27 is anticipated by Phan-Anh.

1. Comparison of Claim 27 to the Teachings of Phan-Anh

Petitioner argues nearly all of the limitations required by claim 27, including the S-CSCF backing up necessary data on a storage entity in the IMS network, are disclosed by Phan-Anh for the same reasons Phan-Anh discloses corresponding limitations required by claim 1. *See* Pet. 83–85.

For example, Petitioner argues Phan-Anh discloses the S-CSCF backing up necessary data on the network storage entity because Phan-Anh teaches storing a subscriber's TA, which is needed to restore the subscriber's service, on an HSS. Pet. 40–44, 84 (citing Ex. 1003, 4:20–22, 4:35–40, Fig. 4B). Moreover, relying on the testimony of Mr. Bishop, Petitioner argues a person of ordinary skill in the art would have found it obvious to modify Phan-Anh to also store the SIP-based URL address of the P-CSCF through which the user accesses the IMS on the HSS because Phan-Anh incorporates TR23.821 by reference, and TR23.821 teaches the S-CSCF must also know the P-CSCF's SIP-based URL address to provide service to the user. *Id.* at 43–44 (citing Ex. 1002 ¶¶ 106–109; Ex. 1004, 27–29, 56–57).

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Patent Owner argues Phan-Anh fails to disclose backing up “necessary data” that includes a P-CSCF’s SIP-based URL address. Prelim. Resp. 56–57. Patent Owner further argues that Petitioner has not alleged that Phan-Anh inherently discloses backing up the P-CSCF’s SIP-based URL address as “necessary data”, but has instead argued that “it would have been obvious to store this contact information in the HSS.” *Id.* at 57 (quoting Pet. 43–44). Therefore, Patent Owner argues Petitioner has failed to show Phan-Anh anticipates claim 27 because “Petition[er] has not demonstrated that this element from claim 27 is contained, either explicitly or inherently, within the four corners of the Phan-Anh reference.” *Id.*

We are persuaded by Patent Owner’s argument. To demonstrate that Phan-Anh anticipates claim 27, Petitioner must show Phan-Anh discloses “the claimed invention arranged or combined in the same way as recited in the claim.” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008). Petitioner cannot demonstrate Phan-Anh anticipates claim 27 by combining features from different embodiments of Phan-Anh because such “differences . . . however slight, invoke the question of obviousness, not anticipation.” *Id.* Nor can Petitioner demonstrate Phan-Anh anticipates claim 27 by showing that Phan-Anh contains “multiple, distinct teachings that the artisan might somehow combine to achieve the claimed invention.” *Id.*

Yet this is exactly what Petitioner has tried to do. Petitioner has not argued Phan-Anh explicitly or inherently discloses storing both the user’s TA and the P-CSCF’s address on the HSS. Rather, Petitioner has argued Phan-Anh discloses storing the user’s TA on the HSS, and a person of ordinary skill in the art would have understood and found it obvious, based

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on the teachings of TR23.821, to also store the P-CSCF's address on the HSS. *See* Pet. 43–44. Although this may mean that claim 27 would have been obvious over Phan-Anh, Petitioner has not challenged claim 27 on that ground. Rather, Petitioner has challenged claim 27 as anticipated by Phan-Anh. *See* 37 C.F.R. § 42.104(b)(2) (requiring a petitioner to set forth the specific statutory ground on which the challenge to the claim is based).

Accordingly, for the reasons discussed above, we are persuaded that Petitioner has failed to demonstrate a reasonable likelihood of showing Phan-Anh anticipates claim 27.

1. Alleged Obviousness of Claims 1 and 3 over Phan-Anh, TR23.821, S2-060216, and TS23.228

Petitioner argues claims 1 and 3 of the '365 patent would have been obvious over Phan-Anh, TR23.821, S2-060216, and TS23.228. *See* Pet. 85–86. Upon review of Petitioner's evidence and Patent Owner's arguments regarding the insufficiency of that evidence, and for the reasons discussed below, we are not persuaded that Petitioner has demonstrated a reasonable likelihood of showing claims 1 and 3 would have been obvious over Phan-Anh, TR23.821, S2-060216, and TS23.228.

1. Comparison of Claims 1 and 3 to the Combined Teachings of Phan-Anh, TR23.821, S2-060216, and TS23.228

Petitioner does not compare the limitations of claims 1 and 3 to the teachings of Phan-Anh, TR23.821, S2-060216, and TS23.228. Instead, Petitioner argues it would have been obvious to combine the teachings of Phan-Anh and TR23.821 because Phan-Anh incorporates TR23.821 by reference in its entirety, Phan-Anh addresses a shortcoming of the all-IP network disclosed in TR23.821, and a person of ordinary skill in the art “would have looked to TR23.821 to understand the context and details for

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implementation of the solution described in Phan-Anh.” Pet. 85–86.

As discussed in § II.F.2, *supra*, a request for *inter partes* review must set forth, for each claim challenged, (a) the statutory grounds on which the claim is challenged, (b) the prior art relied upon in support of the challenge, and (c) a statement explaining how the claim is unpatentable under the statutory ground by “specify[ing] where each element of the claim is found in the prior art . . . relied upon.” 37 C.F.R. § 42.104. The request “*shall not be instituted* for a ground of unpatentability *unless . . . the petition supporting the ground would demonstrate* that there is a reasonable likelihood that at least one of the claims challenged in the petition is unpatentable.” *Id.* § 42.108(c) (emphases added).

Although Petitioner has identified the statutory ground and prior art relied upon in its challenge of claims 1 and 3 as obvious over Phan-Anh, TR23.821, S2-060216, and TS23.228, Petitioner has failed to provide sufficient analysis showing where each of the limitations recited in claims 1 and 3 can be found in the prior art. *See* Pet. 85–86. Indeed, Petitioner has even failed to incorporate by reference its analysis, discussed in § II.E.4, *supra*, that claims 1 and 3 would have been obvious in view of the teachings of Phan-Anh and S2-060216, alone. *Id.* Consequently, Petitioner has failed to demonstrate a reasonable likelihood of showing claims 1 and 3 would have been obvious over the combination of Phan-Anh, TR23.821, S2-060216, and TS23.228. *See* 37 C.F.R. § 42.108(c).

III.CONCLUSION

Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of claims 1 and 3 of the ’365 patent as obvious over Phan-Anh and S2-060216.

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Petitioner has failed to demonstrate a reasonable likelihood that it would prevail in showing the unpatentability of (a) claims 1 and 3 as obvious over Phan-Anh, S2-060216, and TS23.228, (b) claims 1 and 3 as obvious over Phan-Anh, TR23.821, S2-060216, and TS23.228, (c) claim 27 as anticipated by Vergara, and (d) claim 27 as anticipated by Phan-Anh.

The Board has not yet made a final determination with respect to the patentability of any claim.

IV. ORDER

It is:

ORDERED that, pursuant to 35 U.S.C. § 314, an *inter partes* review is hereby instituted on the following grounds:

Claims 1 and 3 under 35 U.S.C. § 103(a) as obvious over Phan-Anh and S2-060216;

FURTHER ORDERED that, except as specifically enumerated above, no other ground of unpatentability, with respect to any claim, is instituted for trial; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of trial commencing on the entry date of this Decision.

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